



*Consulting Engineers
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May 28, 2013

Via Electronic Mail

Ms. Raji Josiam
Remedial Project Manager, Superfund Division
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas

**RE: US Oil Recovery Superfund Site
Conceptual Site Models
Response to Comments and Revised Conceptual Site Models**

Dear Ms. Josiam,

We appreciate EPA's May 8, 2013 comments on the Draft Conceptual Site Models (CSMs). We have reviewed the comments and provided a detailed response to each comment in the attached table. The revised CSMs are also attached to this email.

We look forward to discussing these with you.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

PASTOR, BEHLING & WHEELER, LLC

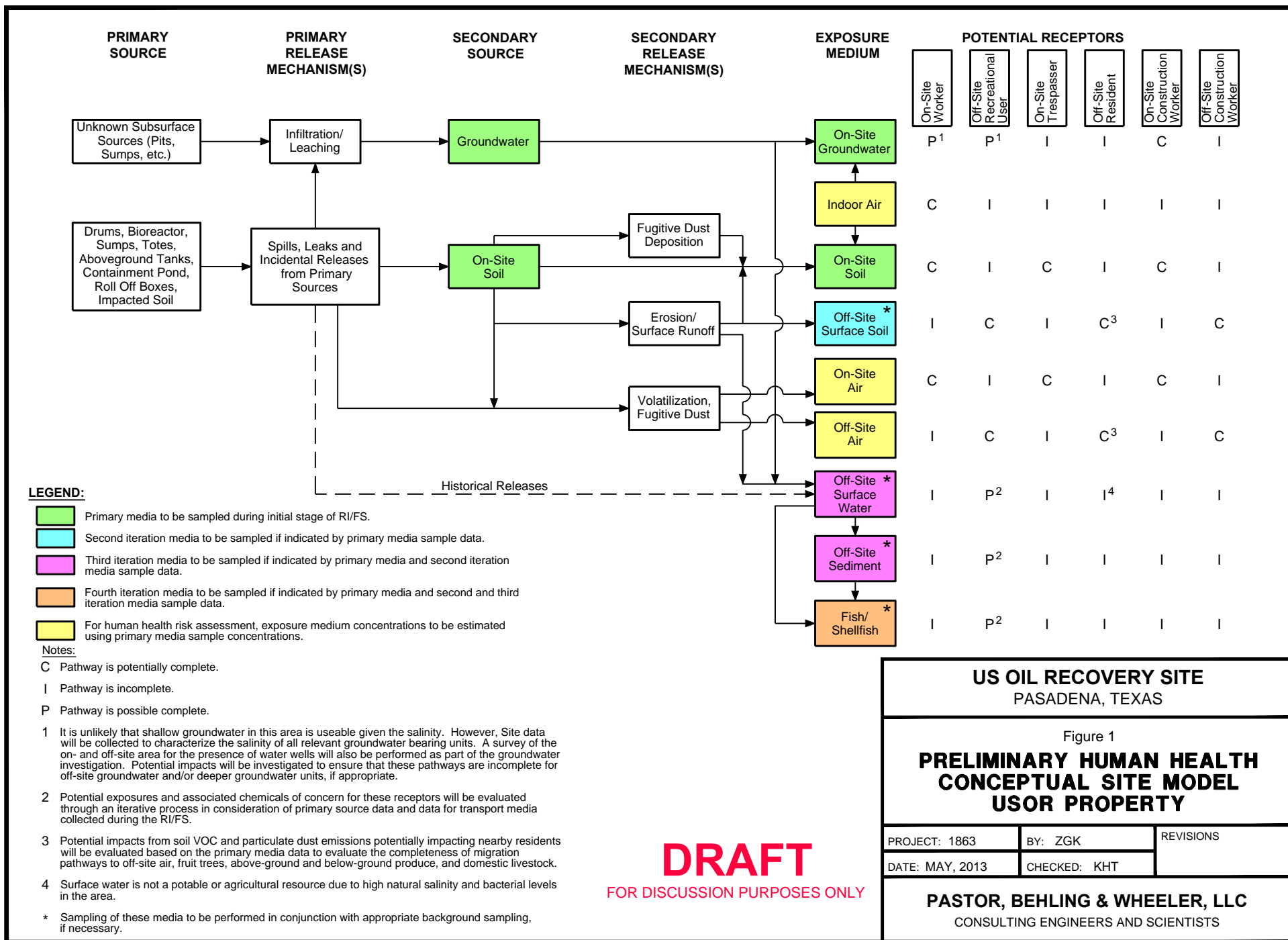
A handwritten signature in black ink, appearing to read 'M. Wickham'.

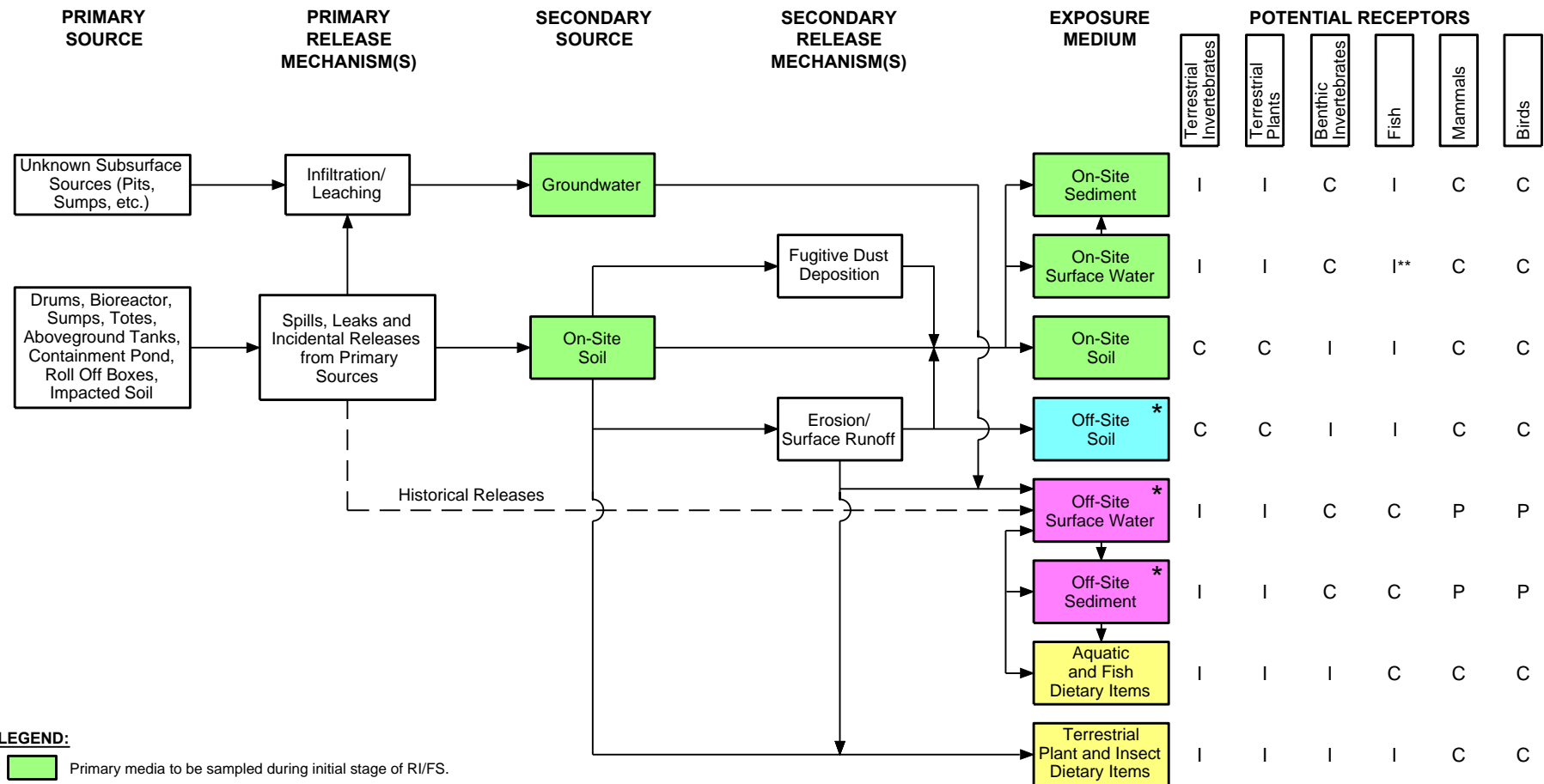
Matthew K. Wickham
Principal Hydrogeologist

Attachments

RESPONSE TO EPA'S MAY 8, 2013 COMMENTS ON THE DRAFT PRELININARY CONCEPTUAL SITE MODELS (DATED APRIL 2013)
US OIL RECOVERY SUPERFUND SITE

COMMENTS	COMMENTS	COMMENTS	COMMENTS	COMMENTS
COMMENTS	COMMENTS	COMMENTS	COMMENTS	COMMENTS
Kenneth Shewmake	1	It is appropriate to have separate conceptual Site models (CSMs) for human health and ecological risk. It is also appropriate to have separate CSMs for the two Operable Units. This is an improvement over previous drafts of this document	We appreciate your input and believe that separate CSMs will become necessary as we move through this process.	No action necessary.
Kenneth Shewmake	2	The format of the CSMs has been changed to show sources and release mechanisms, exposure mediums, and potential receptors. This is a big improvement over the previous draft of the ecological CSM. The depiction of the possible pathways from the primary source to exposure medium appears to show most of the relevant pathways that need to be investigated, but the following changes will need to be made to the draft CSMs.	See specific responses to the individual bullets below.	See below.
Kenneth Shewmake	2a	Both ecological CSMs (Figures 2 and 4) will need to be revised to show consumption of dietary items by higher trophic level receptors. The dietary items should be listed under exposure medium and the relevant pathways need to be shown	Agree.	Figures 2 and 4 have been revised to reflect the comment.
Kenneth Shewmake	2b	This is a preliminary CSM and the potential receptors will need to be refined during the risk assessment process. In the early stages it is OK to use general categories like birds and mammals for receptors but this may need to be refined as more information is gathered at the site. When assessment and measurement receptors are selected this will need to be shown on the CSM. Categories may include piscivorous birds, shore birds, song birds, herbivorous mammals, omnivorous mammals, and other categories of receptors. It is possible that reptiles and amphibians will need to be evaluated. One category of receptor that needs to be added at this time is benthic invertebrates.	Agree. Benthic invertebrates have been included for on-site and off-site sediment and surface water. The general categories of receptors and ecological CSMs will be revised in the SLERA once assessment and measurement endpoints have been identified and discussed and more Site information is gathered.	Figures 2 and 4 have been revised to reflect the comment.
Kenneth Shewmake	2c	During the May 3, 2013 site visit we observed several areas on site at the USOR OU with shallow standing water. In most cases it appeared that the water was the short term result of recent rainfall, but in some cases we observed aquatic plants and animals in these areas. This indicates that some on-site surface water and sediment will need to be evaluated. The CSM needs to be changed to reflect this	On-site surface water and sediment will be sampled during the investigation and information related to the the nature of surface water at the Site will be evaluated during Site activities and included in the SLERA.	Figure 2 has been revised to reflect the comment and show these pathways as complete.
Kenneth Shewmake	2d	It appears that both fresh water and salt water are present at the site or in close proximity to the site. Future versions of the CSM will need to depict the presence of both freshwater and saltwater because the exposure for various receptors will be different for these exposure media.	The salinity of the on-site and off-site surface water will be evaluated during site characterization. This information will be included in the SLERA and the ecological CSMs will be revised if necessary.	No changes to the CSMs have been made.
Kenneth Shewmake	3	Figures 2 and 4, note number (1) in the legend: The site has standing water, shallow wetland areas, undeveloped fields, numerous trees, and is in close proximity to sensitive environmental areas. It is likely that transport pathways exist from the site to sensitive habitat that is located adjacent to the site. The presence of threatened and endangered species on or in close proximity to the site has not been evaluated. Future land use has not been established and because of this it is not clear if the area could be returned to natural conditions. For these reasons it is inappropriate to limit the risk assessment to acute exposure at this time. All areas with a one should be shown as complete pathways.	Transport pathways, sensitive habitat, the presence of threatened and endangered species on or in close proximity to the Site and future land use will be evaluated as part of the RI/FS and the SLERA.	The reference to acute exposure in the footnotes of the Ecological CSMs have been removed.
Kenneth Shewmake	4	Figures 2 and 4, note number (2) in the legend: Based on observations made during the May 3, 2013 site visit, the on-site soil is suitable habitat for plants and invertebrates. In addition to this plants and invertebrates could be used as prey items by receptors. Exposure pathways listed with a two note need to be changed to show a complete pathway.	We agree that portions of the Site may serve as ecological habitat. These areas will be sampled during the RI and evaluated in the SLERA.	Figures 2 and 4 have been revised to reflect the comment.
Kenneth Shewmake	5	Note (4) in the legend of Figures 1-4: The legend uses color coding to show that the media collection during the first round of sampling will be done iteratively in three phases. The HH CSM (fig 1 and 3) show 4 phases of sampling. The reason provided for doing sampling in phases is to avoid sampling for COPCs that did not originate at the site, and to refine sampling needs based on sample results. An iterative sampling plan is acceptable, but it should be assumed that sampling for off-site soil, off-site surface water, and off-site sediment will be required to complete the SLERA. A preliminary sampling plan for sampling off-site surface water, off-site sediment, and off-site soil should be included in the work plan and in the SAP. This sampling plan can be modified when phase one sample results are obtained. The first phase of the first round of sampling should include on-site soil, on-site surface water, on-site sediment, and groundwater. An evaluation of the possibility of groundwater to surface water transport of contaminants will be needed. The second phase and third phase depicted in the CSM should be combined as the results of the second phase (off-site soil) will not impact the decision to sample off-site sediment and off-site surface water. Additional on-site media samples can be collected in phase 2 as the results from phase 1 can be used to screen for the possibility of vapor intrusion. The third phase would include any fish and biota samples that are needed. A second round of sampling after the SLERA report may be needed for the BERA as toxicity and bioavailability studies may be needed.	We agree with the majority of the comment. We would like to keep the off-site soil sampling as a separate phase from the surface water and sediment sampling in Vince Bayou so that we can use the data to help select the appropriate COCs to analyze for in those media. The work plan and SAP will include the various phases of the investigation although sampling locations and analytes for the media may not be completely known until the primary media data have been collected and analyzed. We also agree that additional on-site media may need to be sampled in an iterative manner, as well as additional studies to support the BERA.	No changes to the CSMs have been made based on this comment.
Kenneth Shewmake	6	A topographic map and a map depicting areas that are within the 100 year floodplain would be useful for determining the off-site areas that need to be sampled. A careful review of available information on site history will also be needed before ruling out COPCs based on on-site media sample results. Information on groundwater depth, flow and classification will also be needed.	We agree with the points made in the comment.	No changes to the CSMs have been made based on this comment.
Kenneth Shewmake	Revisions to Figs 2 and 4	The commenter provided specific suggestions for changes to the receptor and exposure medium sections of Figures 2 and 4.	Agree.	Figures 2 and 4 have been revised per the table.
Dipinjana Bhattacharya	1	The sampling phases should be limited to two. On-site groundwater and on-site soil should be in phase 1. The rest (off-site surface soil, on-site air, off-site air, surface water, sediment, and fish/shellfish) should be in the second phase. Background samples could also be collected in the second phase.	We believe that three phases of sampling is more appropriate in order to have a better understanding of site-related COCs prior to sampling media in Vince Bayou given the numerous potential other sources in the area. The first phase will include on-site soil, on-site groundwater, on-site surface water and sediment. The second phase will include off-site soil and off-site groundwater if potential impacts are indicated after the first phase of sampling. Off-site surface water and sediment will be included in the third phase of sampling, and fish sampling will follow if surface water and sediment data suggest site-related COCs may be impacting fish. Background sampling will be conducted, if necessary, during the same sampling event for the site media. At this time, it is anticipated that on-site ambient and indoor air as well as off-site air exposure would be estimated by using conservative models. Sampling of these media may be conducted if the pathways are determined to be complete and potentially significant.	No revisions to the CSMs based on this comment..
Dipinjana Bhattacharya	2	What is the final land use determination? The default is residential unless otherwise stated. Please find proof of land use.	Land use on Site has historically been and is currently Commercial/Industrial. The Site is currently under the control of a court-appointed receiver. Documentation for future use will be provided in the RI/FS report	Figures 1 and 3 have not been revised to reflect the comment.
Dipinjana Bhattacharya	3	The notes in the legend (specifically Note: 1) needs to be proven.	Note 1 has been revised to indicate that salinity of groundwater bearing units will be assessed as part of the groundwater investigation for the Site.	Note 1 has been revised per the comment.
Dipinjana Bhattacharya	4	Trespasser receptor needs to be evaluated for on-site use given the fact that break-ins have occurred.	Figures 1 and 3 have been revised to include the trespasser receptor. Potential exposure media for this receptor include on-site soil and on-site air (on-site sediment will be evaluated for the human health risk assessment as soil).	Figures 1 and 3 have been revised to reflect the comment.
Dipinjana Bhattacharya	5	Upon evaluating the off-site residential neighborhood, I did notice a potential well. This needs to be further evaluated. If residents are drinking from that well then this opens a new pathway. Information on local wells and water quality need to be presented.	The off-site residential neighborhoods are most likely upgradient of the Site and, as such, it is unlikely that these areas would be impacted from the site groundwater. However, this pathway and the potential for site-related COCs to have migrated off-site and to these areas will be evaluated once groundwater conditions are understood at the Site. This pathway will be added to the CSM if the data suggest that it is potentially complete.	Data will be collected as part of the groundwater investigation to determine whether this pathway is complete, and will include a well survey of the area.
Dipinjana Bhattacharya	6	Also there were chickens on one visible yard. This potential food pathway needs to be evaluated.	Potential exposure to site-related COCs in home-raised chickens will be considered if on-site data suggest migration of COCs off-site is potentially significant.	A footnote has been added to Figures 1 and 3 to indicate these pathways will be considered if on-site data suggest that the pathways are complete.
Dipinjana Bhattacharya	7	Fruit trees were visible on one yard. This potential food pathway needs to be evaluated.	Potential exposure to site-related COCs in home-grown fruits and vegetables (both above and below ground) will be considered if on-site data suggest migration of COCs off-site is potentially significant.	A footnote has been added to Figures 1 and 3 to indicate these pathways will be considered if on-site data suggest that the pathways are complete.
Dipinjana Bhattacharya	8	Groundwater to off-site air pathway needs to be evaluated.	This pathway will be evaluated with on-site and/or off-site groundwater if it contains site-related volatile organic compounds.	Figures 1 and 3 have been revised to reflect the comment.





DRAFT
FOR DISCUSSION PURPOSES ONLY

**US OIL RECOVERY SITE
PASADENA, TEXAS**

Figure 2
**PRELIMINARY ECOLOGICAL
CONCEPTUAL SITE MODEL
USOR PROPERTY**

PROJECT: 1863	BY: ZGK	REVISIONS
DATE: MAY, 2013	CHECKED: KHT	

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